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Pulmonary Hypertension and Venous Thrombo-embolic Disease

IMPACT OF ETIOLOGY OF PULMONARY HYPERTENSION ON POST-PROCEDURAL MANAGEMENT AND OUTCOMES IN PATIENTS UNDERGOING TRANSCATHETER AORTIC VALVE REPLACEMENT

Oral Contributions
Room 150 B
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Session Title: Pulmonary Hypertension and Pulmonary Thromboembolic Disease Year in Review
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Background: Pulmonary hypertension (PH) may arise from both pre-capillary and post-capillary etiologies. The impact of PH etiology upon post-procedural management and outcomes after transcatheter aortic valve replacement (TAVR) is unknown.

Methods: We compared post-procedural management and outcomes after TAVR by the European Society of Cardiology PH classification among 196 consecutive patients at a single center from 4/2009 - 4/2013: 1) No PH (mean pulmonary artery pressures (mPA) <25 mm Hg); 2) pre-capillary PH (mPA≥25 and pulmonary capillary wedge pressure (PCWP) <15 mm HG; 3) post-capillary passive PH (mPA≥25, PCWP≥15 and transpulmonary gradient (TPG) ≤12), and 4) post-capillary reactive PH (mPA≥25, PCWP>15 and TPG>12).

Results: 168 patients had sufficient quality data to classify PH etiology (age = 85±9, 55% women). Baseline characteristics did not differ between groups except for PA mean and LVEF (Table). After TAVR, post-capillary reactive PH patients were more likely to require pressors, iloprost and sildenafil; post-capillary PH patients had higher 1-year mortality (29%, p=0.03). In Cox proportional hazards analysis, all-cause mortality significantly differed by PH subtype after adjustment for PA mean and LVEF.

Conclusion: Patients with different types of PH undergoing TAVR have significantly different PA pressures, LVEF, pressor requirements and 1-year mortality. Advanced PH therapies are only occasionally required among patients with post-capillary reactive PH.

	No PH (N=56) % or mean (SD)	Pre-capillary (N=20) % or mean (SD)	Post-capillary passive (N=37) % or mean (SD)	Post-capillary reactive (N=55) % or mean (SD)	p*
% of patients	33	12	22	33	
PA mean (mmHg)	20 (4)	27 (3)	32 (6)	40 (8)	<0.001
LVEF	50 (16)	57 (6)	43 (16)	47 (18)	0.04
Net I/O	0.1 (1.5)	0.2 (1.5)	0.4 (1.7)	- 0.01(4.3)	0.86
Pressors	77%	55%	68%	85%	0.03
Milrinone	36%	50%	54%	49%	0.30
Dobutamine	7%	0%	8%	7%	0.65
Inhaled nitric oxide	2%	0%	0%	2%	0.79
Iloprost	0%	0%	0%	9%	0.01
Sildenafil	0%	0%	0%	9%	0.01
Intubation time (hrs)	15 (11)	20 (15)	19 (25)	24 (22)	0.14
ICU time (hrs)	93 (100)	114 (68)	91 (119)	108 (89)	0.71
Days to discharge	7.5 (5.1)	10.2 (5.9)	7.3 (5.1)	10.0 (12.5)	0.25
1-year mortality	7%	19%	33%	26%	0.03

* ANOVA for continuous and Chi2 for categorical variables